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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/719,019

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Sung-sik Kim

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11/14/2006

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EXAMINER

CHIEN, LUCY P

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/719,019	KIM, SUNG-SIK	
	Examiner	Art Unit	
	Lucy P. Chien	2871	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**3. Claim 1-14,17,18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popovich et al., (Popovich), USPAT 6,525,847 in view of Yasuda et al., (Yasuda), EP 0 540 137 A1 (provided by the applicant).**

4. As to claim 1, Popovich discloses a display apparatus for selectively display a Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over two-dimensional (2D) image and a three-dimensional (3D) image (title), the display apparatus comprising a flat panel display device (fig. 20, ref. 405) which generates a two-dimensional image, and a switching panel ("holographic optical element", fig. 20, ref. 420, 470, HOE) which is disposed in front of the flat panel display device to be separated from the flat panel display device by a predetermined distance and is

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controlled according to a type of image generated by the flat panel display device so that the 2D image and the 3D image can be displayed (abstract; col. 23, lines 36 - col. 24, line 61).

However, the reference fails to specifically disclose a flat panel display device where a plurality of viewpoint images having parallax is generated when 3D image is displayed.

Yasuda discloses a 3D image display device where a plurality of viewpoint images having parallax is generated when 3D image display is requested (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have a flat panel display device with a plurality of viewpoint images having parallax to be generated when 3D image display is requested since one would be motivated to provide a method of easily realizing 3D display of an image by electronically and variably controlling the appearances and disappearances of parallax (page 3, lines 3-6).

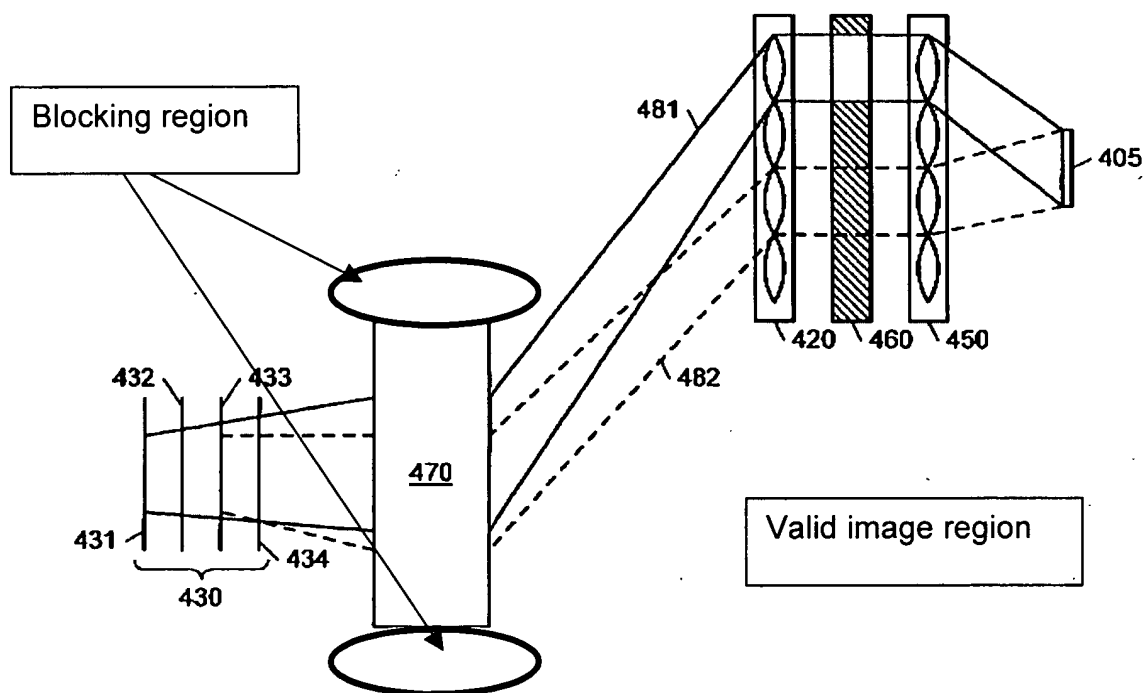
As per claim 2, Popovich discloses the display apparatus as recited above having a structure corresponding to pixel information of the flat panel display device when a plurality of viewpoint images for forming 3D image are generated by the flat panel device (col. 23, lines 36-60).

(Note: the limitation "is formed to transmit light as it is when the two-dimensional image is generated by the flat panel display device" is not a patentably distinct claim because a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art

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apparatus satisfying the claimed structural limitations.)

As to claims 3-4 and 10-12, Popovich discloses the display apparatus as recited above having a switching panel (470) with valid image display region to transmit light and a selective blocking region to block light (see circled/label areas in fig. 20 reproduced below for convenience).

**FIG. 20**

Furthermore, Popovich discloses that the valid image display region can be adjusted to any size (col. 25, lines 35-59) and satisfies the formulaic expressions of

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claims 10-12 where Popovich discusses adjusting size and viewing distances according to the Rayleigh two-point criteria (col. 25, lines 35-39).

Regarding claims 5-8, Popovich discloses the display apparatus as recited above where the switching panel is a liquid crystal display (fig. 1, ref. 10', col. 5, lines 45-61) designed to turn on and off light according to a control signal (col. 10, lines 22-38) and where the flat panel display device is an LCD display (405).

As per claim 9, Popovich disclose the display apparatus as recited above where the flat panel display device generates images in a  $n \times n$  matrix in each pixel (col. 23, line 61 - col. 24, line 3', col. 25, lines 38-51).

As to claims 13-14, Popovich discloses the display apparatus as recited above fudher comprising a visual field expansion unit having a first (450) and second (420) lens plate.

Regarding Claim 17,

In addition to Popovich and Yasuda et al as disclosed above, Yasuda discloses wherein the switching panel forms a parallax barrier having a grid structure when the three-dimensional image display is requested (Figure 8A,8B)(Page 9, rows 26-35).

Regarding Claim 18,

In addition to Popovich and Yasuda et al as disclosed above, Yasuda discloses the switching panel forms a parallax barrier having a grid structure when the three-dimensional image display is requested (Figure 8A,8B)(Page 9, rows 26-35) thus, the flat panel display device is configured to display the viewpoint images having parallax in a horizontal direction, a vertical direction and a diagonal direction.

***Response to Arguments***

Applicant's arguments filed 8/9/2006 have been fully considered but they are not persuasive.

Applicant's argument's on Page 10 first paragraph that "...because the switching panel of Popovich provides for diffracting light rays to several image planes 331-334, and not blocking the light rays as required by Yasuda, combining Popovich with the parallax display of Yasuda renders the 3D viewing of Popovich unworkable and, thus, unsatisfactory for its intended purpose." Is not persuasive. Popovich's switching panel (holographic optical element (470) does block light rays (please see Column 30, rows 20-23).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy P. Chien whose telephone number is 571-272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lucy P Chien  
Examiner  
Art Unit 2871

  
ANDREW SCHECHTER  
PRIMARY EXAMINER